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U. S. Department of Agriculture

SPECIFICATIONS FOR AIRPLANE OBSERVATION FLIGHTS AT FAIRBANKS, ALASKA

For making airplane observation flights for the Weather Bureau, at the times and dates specified herein, to heights of 17,000 feet above sea-level, at Fairbanks, Alaska, or immediate vicinity, during July and August, 1933, in accordance with the following schedule and conditions:

Cost per flight \$

(I) SCHEDULE OF FLIGHTS-

- (a) Although flights must be started, as a rule, at the time specified, latitude in starting them earlier or later will be allowed under conditions set forth hereinafter. (By "starting" a flight is meant the actual take-off of the airplane. By "ground" is meant the field at which the flights are to be started).
- (b) On the following dates flights will be started between 8 a.m. and 10 a.m. and between 8 p.m. and 10 p.m. (150th Meridian Time), unless weather conditions are unfavorable as specified under (II) WEATHER CONDITIONS, of these specifications:

July 12, 1933
August 9, 1933

- (c) On the following dates flights will be started between 2 a.m. and 4 a.m. (150th Meridian Time); unless weather conditions are unfavorable as specified under (II) WEATHER CONDITIONS, of these specifications:

July 13, 1933
August 10, 1933

- (d) On the following dates flights will be started between 8 a.m. and 10 a.m. and between 8 p.m. and 10 p.m. (150th Meridian Time), unless weather conditions are unfavorable as specified under (II) WEATHER CONDITIONS, of these specifications:

July 26, 1933
August 23, 1933

- (e) If unfavorable weather conditions as specified under (II) WEATHER CONDITIONS, of these specifications, make it inadvisable to start any flights at the scheduled time, it shall be started not later than two hours after conditions become favorable.

(II) WEATHER CONDITIONS-

- (a) Weather conditions will be considered favorable for making the flights when the ceiling at the airport from which the

flights are regularly made is reported by the Weather Bureau to be over 800-feet and the visibility over two miles unless, (1) the official forecast, which will be issued by the Weather Bureau Airport Station as a trip forecast, for every flight, indicates a lowering of the ceiling to 800 feet or a decrease of visibility to two miles or a probability of dangerous ice formation on the airplane within 3 hours; or (2) when it would be necessary to fly into cumulo-nimbus clouds; or (3) when for any other reason the Weather Bureau observer considers the weather or other conditions too dangerous for flying.

(III) DEFINITION OF FLIGHT-

- (a) A flight will consist of making an airplane ascent (the airplane to be instrumentally equipped as hereinafter set forth), at a rate of ascent not greater than 1500 feet per any 5 minute period. (Intervals during which the airplane is leveling off as indicated in the following paragraph (b) to be excluded from above computations).
- (b) The airplane must level off during the ascent for at least one minute at 1,500; 4,500; 7,500; 10,500; 13,500 feet above ground; also at the maximum height reached in each flight.
- (c) After reaching the maximum height the airplane will return to the ground as rapidly as practicable.
- (d) The place of landing must be at the place of take-off unless weather conditions (as indicated in (II) WEATHER CONDITIONS, of these specifications), make this impracticable.
- (e) The entire flight must be made, as nearly as practicable, directly over the Airport from which the take-off is regularly made.
- (f) No ascent of less than 3000 feet above sea-level shall be deemed to constitute a flight within the meaning of these specifications.
- (g) The maximum height of each flight will be computed and determined from the meteorograph record by standard Weather Bureau methods. In the event of failure of the meteorograph to record, payment will be made on the basis of the altimeter reading as provided for under (IV) (f) of these specifications. Such altimeter readings will be corrected, if necessary, by the Weather Bureau, in accordance with the previous general agreement found between altimeter indications and the height as computed by standard Weather Bureau methods.

(IV) WRITTEN REPORT OF FLIGHT-

The contractor's pilot shall submit to the local representative of the Weather Bureau a written and signed statement containing the

following information at the termination of each flight, so far as it is practicable to determine.

- (a) Time and height above ground as indicated by altimeter when entering and emerging from clouds, fog, and haze; also whether the bases, tops or sides of clouds are referred to.
- (b) Time of beginning and ending of precipitation and kind of latter.
- (c) Time of occurrence, and direction observed, of unusual phenomena such as lightning, thunder, auroras, etc.
- (d) Cloud types and amounts visible above lower cloud layers.
- (e) Whenever clouds are not entered but their distance from the airplane is relatively close, their estimated height above ground as indicated by the altimeter should be given. (Such heights should always be indicated as estimated).
- (f) Maximum height above ground as indicated by altimeter and time at which descent is begun.
- (g) The pilot will press a button or other similar arrangement for closing an electric circuit for marking the record sheet whenever conditions in (a), (b), (c) and (f) occur. (In the last case (f) the contact will be made when descent is begun).

(V) EQUIPMENT AND PERSONNEL-

(a) To be furnished by the Weather Bureau

- (1) The Weather Bureau will furnish an aero-meteorograph (weight approximately seven (7) lbs.).
- (2) A representative of the Weather Bureau will mount this instrument on the airplane before each flight is begun and remove it from the airplane when the flight is terminated.

(b) To be furnished by the contractor

- (1) The contractor shall furnish the necessary airplane, licensed pilot, material and equipment customary for airplane navigation; also a suitable mounting apparatus for carrying the above mentioned Weather Bureau instrument on the airplane. The position and method of mounting this instrument must be approved by the Weather Bureau representative.

(VI) PAYMENT-

- (a) Payment will be made as soon after the end of each month as it is possible to audit the vouchers at the U. S. Department of Agriculture, Washington, D. C.
- (b) Should the maximum elevations attained be greater or less than 17,000 feet above sea-level, payments made by the Government for each flight will be increased or reduced on the basis of the foregoing bids according to the following scale:

(1) For flights in excess of 17,000 feet above sea-level:

An addition of ten per cent (10%) of the bid price for a flight to 17,000 feet above sea-level, for each additional unit of 1500 feet or major fraction. (A major fraction is defined as over 750 feet above the highest 1500 foot level attained on the flight.)

(2) For flights less than 17,000 feet above sea-level:

15,000 to 16,999 feet, incl., a deduction of ten per cent (10%) of the bid price for a flight to 17,000 feet.

13,500 to 14,999 feet incl., a deduction of twenty per cent (20%) of the bid price for a flight to 17,000 feet.

12,000 to 13,499 feet incl., a deduction of thirty per cent (30%) of the bid price for a flight to 17,000 feet.

10,500 to 11,999 feet incl., a deduction of forty per cent (40%) of the bid price for a flight to 17,000 feet.

9,000 to 10,499 feet incl., a deduction of fifty per cent (50%) of the bid price for a flight to 17,000 feet.

7,500 to 8,999 feet incl., a deduction of sixty per cent (60%) of the bid price for a flight to 17,000 feet.

6,000 to 7,499 feet incl., a deduction of seventy per cent (70%) of the bid price for a flight to 17,000 feet.

4,500 to 5,999 feet incl., a deduction of eighty per cent (80%) of the bid price for a flight to 17,000 feet.

3,000 to 4,499 feet incl., a deduction of ninety per cent (90%) of the bid price for a flight to 17,000 feet.

Less than 3,000 feet, no payment will be made for the flight.

All heights under (2) above are above sea-level.

(c) While the contractor shall have the right of decision as to whether or not a flight shall be made:

(1) there shall be deducted from amounts otherwise due him liquidated damages at the rate of 100% of the contract price for one flight to 17,000 feet above sea-level, in accordance with these specifications, for each failure to make a scheduled flight when the failure is due to other than unfavorable weather conditions as specified under (II) WEATHER CONDITIONS, of these specifications;

(2) there shall be deducted from amounts otherwise due him liquidated damages at the rate of 25% of the contract

price for one flight to 17,000 feet above sea-level, in accordance with these specifications, when the flight is started more than one hour before or after the scheduled times indicated under (I) SCHEDULE OF FLIGHTS, unless weather conditions are unfavorable as specified under (II) WEATHER CONDITIONS, of these specifications;

- (3) there shall be deducted from amounts otherwise due him liquidated damages at the rate of 25% of the contract price of one flight to 17,000 feet above sea-level, in accordance with these specifications, whenever a delay of more than two hours occurs before a flight is started after weather conditions change from unfavorable to favorable as specified under (II) WEATHER CONDITIONS, of these specifications.

Weather conditions are unfavorable as indicated under II WEATHER CONDITIONS of these specifications.

(VII) CONTRACT-

Each bidder must furnish a guaranty bond or certified check drawn in favor of Disbursing Clerk, U. S. Department of Agriculture, as security in the amount of \$200.00 guaranteeing that he will not withdraw his bid within 30 days after the opening of same and that he will, if awarded the contract, execute formal contract and bond, such bond to be in the amount of \$1000.00.

(VIII) GENERAL-

- (a) The pilots making these flights must hold a transport pilot's license; the airplanes used must have been duly inspected and approved by the U. S. Department of Commerce.
- (b) The contractor will not be required to carry a Weather Bureau representative in the airplane making these flights.
- (c) The contractor shall without additional expense to the Weather Bureau obtain all required licenses and permits and the Government shall not be responsible for any damages to persons and property that occur as a result of his fault or negligence in connection with the prosecution of the work.
- (d) The flights shall be made at the Airport Fairbanks, Alaska.
- (e) If the contractor fails to perform satisfactorily the airplane service required herein, the Weather Bureau may procure such service in the open market and the contractor and his sureties will be held liable to the Government for any excess cost over the contract rate occasioned the Government thereby.
- (f) The Weather Bureau reserves the right to reject any or all bids.

